Chapter

Four

Syllabification in UHA:

The Derivational Alternative

4.0. Introduction:

In the previous chapter, I have demonstrated that adopting the constraint-based framework of Optimality Theory enables us to account plausibly for syllabification and other related processes in UHA. However, as we saw there, the process of High Vowel Deletion represents a challenge to this analytical adequacy of OT. This chapter provides the derivational alternative. In particular, it aims to determine whether or not a rule-based account of this process is simpler and/or less *ad hoc* than any OT counterpart. If that is the case, I will also have to determine whether or not that is true for other instances of epenthesis and syncope, and for the process of syllabification in general.

Ultimately, this chapter endeavours to determine which of the two theoretical frameworks is capable of providing a more comprehensive understanding of syllabification in UHA. In particular, weighing stipulations against language universals will be central to the comparison. The less stipulative a certain account is, the more plausible it will be. Another factor is economy. Through their ranking and interactions, constraints carry the entire burden of any analysis in OT. On the other hand, will rules be sufficient in a given derivational account, or do we need both rules and constraints to derive a certain output? Assuming this, I will claim that OT is, by

and large, a more adequate theoretical framework for the analysis of the discussed processes of UHA.

The chapter proceeds as follows. Section one provides the derivational account of High Vowel Deletion. There, we shall see how simple it is to analyse this process adopting a derivational framework. This will motivate us to attempt a similar analysis of other syllabification-related processes. In section two, I talk about medial consonant licensing via internal vowel epenthesis or shortening. There, I will clarify the need to identify distinct morphological levels where different suffixes are introduced, and consequently different rules may apply. In section three, I discuss instances of postlexical epenthesis claiming that they are prompted by Prosodic Licensing (Stray Erasure). Finally, I present the basic syllabification process in UHA, form the viewpoint of DT. This will allow us to compare the two derivational approaches of rule-based and template-based syllabification to that of OT.

4.1. A Derivational Account of High Vowel Deletion:

In the previous chapter, we have seen how complicated it is to provide an OT account for this syncope process. Although at some stage in the analysis the deletion is attributed to an independently motivated constraint on syllable structure, namely SYL-MIN, I had to resort to the multi-strata version of OT to account for the only attested environment with medial CVVC syllables. In what follows, I will look into the matter from a purely derivational viewpoint in an attempt to achieve simplicity and plausibility. For convenience, let us start by presenting a small group of examples that demonstrates the environment of the process of High Vowel Deletion:

(1)	a.	/kibir + u/	→	[kib.ru] *[ki.bi.ru]	‘they got older’
	b.	/kibir + na/	→	[ki.bir.na] *[kibr.na]	‘we got older’
	c.	/d͡ʒalas + at/	→	[d͡ʒalasat] *[d͡ʒal.sat]	‘she sat down’

In (1 a), a high vowel in a light medial syllable deletes. On the other hand, short vowels in (1 b and c) are not deleted because they do not meet this particular environment. In addition to the examples in (1), deletion will take effect even if its output includes a non-final superheavy syllable of the canonical shape CVVC, but not CVCC. Consider the following two examples:

(2)	a.	/ʃaaʕir + ak/	→	[ʃaaʕ.rak] *[ʃaa.ʕi.rak]	‘your *sg. ms.* male poet’
	b.	/ti + tard͡ʒim + uh/	→	[titard͡ʒimuh] *[titar**d͡ʒm**uh]	‘she translates it *ms.*’

Therefore, the only exception to the environment declared above is when the output contains a sequence of three (or more) consonants. We may capture that environment and this exception in the following rule:

(3) High Vowel Deletion Rule:

$$\begin{array}{c} N \\ | \\ V \\ | \\ [+\text{high}] \end{array} \rightarrow \varnothing \; / \; \begin{array}{l} \\ \\ \text{VC---CV} \\ \\ \end{array}$$

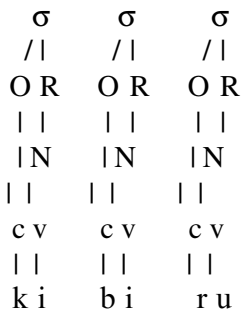
Let us now apply this rule to one of the examples provided above and see how this process of vowel deletion affects the internal structure of the whole syllable. First, I

will apply it to a form whose output does not involve a non-final CVVC superheavy syllable.

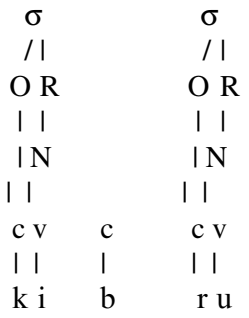
(4)

Underlying Form

Syllabification[1]



High Vowel Deletion

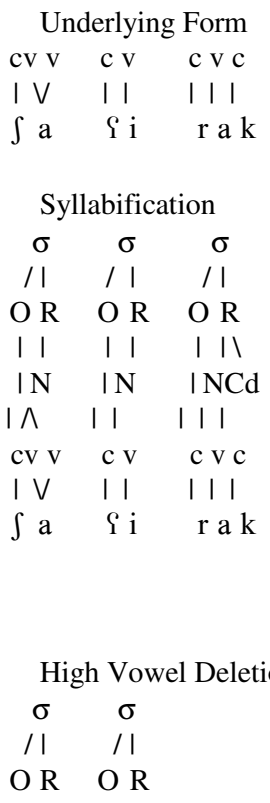


Resyllabification

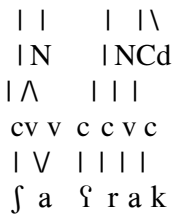
[1] Below, I will discuss with more depth the basic process of syllabification comparing the two approaches of rule-based syllabification and template-bases syllabification, showing the advantages and disadvantages of each as far as UHA is concerned.

Deleting the high vowel that will potentially occupy a syllable's nucleus position results in the disappearance of the whole syllable node whose onset is then resyllabified in the coda of the preceding syllable maximising the latter's template.[2] This, however, is not exactly the case for syllabification with all outputs of the high vowel deletion rule. There will be cases where the unsyllabified consonant is trapped between two maximised syllables. Such a consonant may not be conventionally parsed by either of these neighbouring syllables. Consider the following representation:

(5)

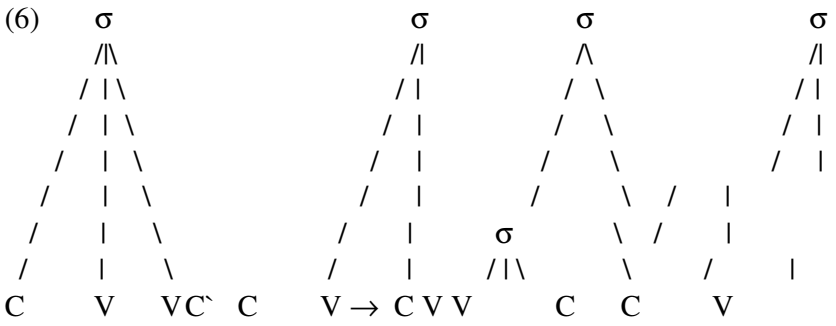


[2] As we saw in chapter three above, the syllable template I am assuming is CVX.



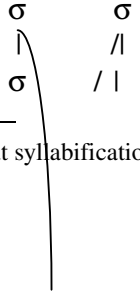
To prosodify such a consonant, I will adopt some type of Chomsky-adjunction of a consonant to the syllable node similar to McCarthy's (1979) analysis of final consonants of superheavy syllables (cf. Kenstowicz 1986 for a similar case in Cairene).[3] A modification of McCarthy's Chomsky-adjunction can be formalised as follows (cf. Jarrah 1993):

(6)

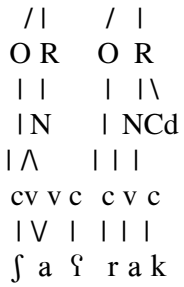


Obviously, this rule entails Chomsky-adjoining a medial consonant to the syllable node providing that the maximum number of consonants in the resulting cluster is two. Therefore, let us apply (6) to the unprosodified consonant in (5).

(7) Resyllabification



[3] In section four, where I talk about syllabification, I will elaborate more on Chomsky-adjunction.



Apparently, the stray consonant in the output of the vowel syncope rule is licensed by the preceding syllable node, and consequently may not be stray erased. It is essential, however, to order this rule of medial Chomsky-adjunction after High Vowel Deletion, in which case it will be fed by the latter. This will prevent (6) from applying to other underlying forms containing non-final CVVC sequences.

As we saw in the previous chapter, High Vowel Deletion can apply across word boundaries. Forms like /#ʔiħ.na# #ni.saa.fir#/ → [‖ʔiħ.nan.saa.fir‖] 'we travel' demonstrate this property. Accordingly, we may claim that it is a postlexical rule. This means that we need not specify a certain order for this special version of Chomsky-adjunction (rule (6)). What we need to specify is the level where it applies. It applies postlexically where it will only be fed by the High Vowel Deletion Rule.[4]

Comparing the above analysis to that of OT, in the previous chapter, demonstrates that it is much simpler and less *ad hoc* to interpret this process of vowel syncope within a derivational framework. The use of a simple, though stipulative, pair of rules achieves a somewhat plausible account. On the other hand, the OT accounts in chapter three had to resort to the desperate measures of multi-strata evaluation, O/O

[4] In the postlexical component, medial stray consonants are limited to the output of the High Vowel Deletion rule (see syllabification in section four below).

correspondence, or C/C correspondence. Obviously, those constraint-based analyses are equally stipulative, yet more complicated. However, the question that arises is whether or not this alleged superiority of DT will hold with other processes of deletion and insertion, and more generally with the basic process of syllabification in UHA. The remainder of this chapter answers this question.

4.2. Lexical Licensing:

The issue of medial consonant licensing will contribute to the discussion of whether OT or DT is more adequate for the analysis of UHA syllabification. As we saw in chapter three above, suffixation may render a medial consonant (or in some cases two) unparsable. This happens when both neighbouring syllables are already (or potentially) maximised. To avoid stray erasure or creating medial superheavy syllables, the language resorts to vowel epenthesis, licensing the stray consonant as an onset of a newly created syllable. In some exceptional cases, however, the long vowel preceding the stray consonant shortens, and the consonant is licensed in the preceding syllable coda. In OT, both processes are attributed to the independently motivated constraints *STRAY and SYL-MAX, and to their relative ranking with respect to the Faithfulness pair. The purpose of this section is to investigate whether we will be able to attain this degree of plausibility and economy adopting a derivational framework.

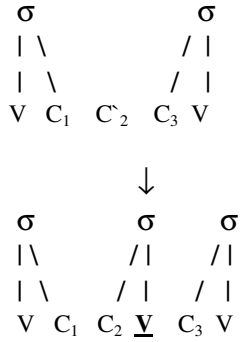
Before actually starting the analysis, let us consider the following group of examples that clarify the environments of vowel epenthesis and shortening:

(8) a. /bint + na/ → [bin.t**a**.na] ‘our daughter’

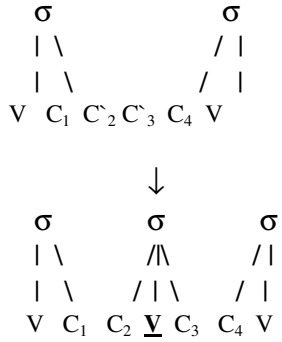
b. /tiin + na/	→	[tii.n**a**.na]	‘our figs’
c. /ʃaaf + ha/	→	[ʃaa.f**a**.ha]	‘he saw her’
d. /katab + t + l + ha/	→	[ka.tab.t**a**l.ha]	‘I/ you *ms. sg.* wrote to her’
e. /ʃaaf + at/	→	[ʃaa.fat]	‘she saw’
f. /gaal + t/	→	[gult]	‘I/you *sg. ms.* said’
g. /gaal + l + i/	→	[gal.li]	‘he told me’
h. /d͡ʒaab + l + ha/	→	[d͡ʒab.l**a**.ha]	‘he brought for her’

Therefore, an epenthetic vowel is inserted between C_2 and C_3 in intervocalic tri-consonantal or quadri-consonantal clusters. Also, an epenthetic vowel is inserted to break up a medial bi-consonantal cluster preceded by a long vowel, i.e. a maximised syllable. However, in some cases, that long vowel is shortened and the stray consonant is licensed as the coda of the preceding syllable. The following representations clarify these processes:[5]

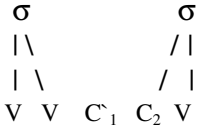
(9)a. Tri-consonantal Cluster:



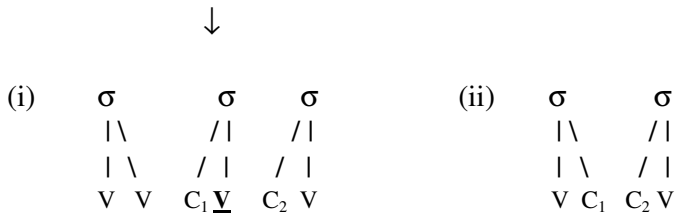
b. Quadri-consonantal Cluster:



c. Bi-consonantal Cluster (preceded by a long vowel):



[5] Obviously, this generalisation does not include forms like (8 h), where both processes take effect. I will not discuss it now, with the intention of returning to it later in the section.



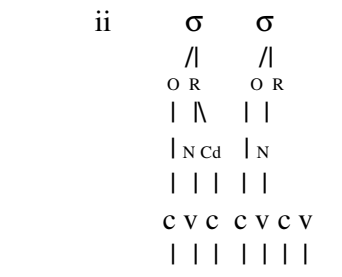
For obvious reasons, I will start by analysing instances of epenthesis, ignoring for the time being the exceptional cases of vowel shortening. Although Selkirk (1981) provides a good argument for predicting epenthesis in both Iraqi and Cairene by suggesting that the stray consonant is licensed as the onset or rime of the epenthetic vowel (forming a degenerate syllable), she had to introduce a further principle that minimised unfilled positions to avoid double epenthesis in quadri-consonantal clusters. Itô (1986) demonstrates that the gist of such a principle is already provided by the independently motivated principle of Maximality.[6] Assuming that, Itô claimed and demonstrated compellingly that only her theory could adequately motivate epenthesis and predict its sites (cf. § 4 below). In a nutshell, one may assume that her Syllabification/Epenthesis process is a mechanism for identifying and licensing stray consonants. Such a process, as I shall demonstrate with examples below, will firstly locate the unsyllabified consonant(s). This will motivate vowel epenthesis, which will in turn create a new syllable incorporating the stray consonant(s) as its onset (and coda).

Now, let us turn to some examples. I will begin with underlying forms containing either an intervocalic tri-consonantal cluster or a bi-consonantal cluster preceded by a long vowel:

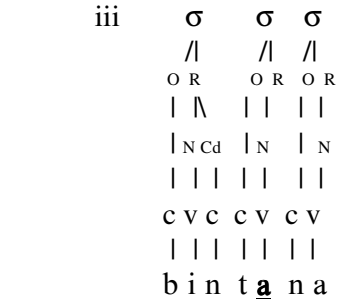
(10) a. / bint + na /

i

ii



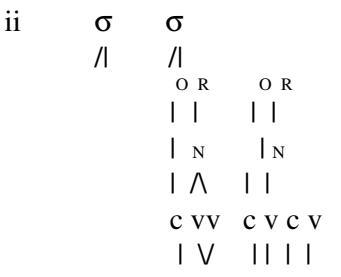
iii



b. / tiin + na /

i

ii



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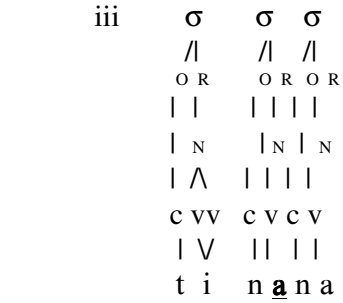


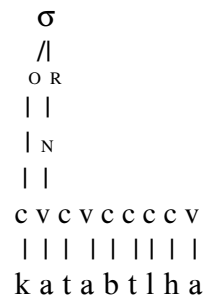
In the first step, the left-most CVX sequence, /bin-/ in (10 a) and /tii-/ in (10 b), is matched maximally to the first syllable. Proceeding rightwards, the first consonant we encounter in both examples, /t/ in (10 a) and /n/ in (10 b), may not be incorporated into any syllable, neither the preceding, as it is already maximised, nor the following one to be, as the next segment is also a consonant. Such an environment would dictate licensing this consonant by inserting an epenthetic vowel to its right, complying with the left-to-right direction of template-matching in UHA. The following consonant, /n/ in both examples, is not syllabified as a coda of this syllable, however. The principle

[6] In section four, I will demonstrate why I am adopting Itô (1986) rather than Steriade (1982).

of maximality may not enforce such parsing, as it would violate the universal principle that enforces CV tautosyllabicity. In other words, if these consonants are syllabified as codas, the respective following syllables in both examples will be onsetless.[7] Consequently, the last syllable in the two examples is erected over the final CV sequence.

In forms with quadri-consonantal intervocalic clusters, the process is almost identical to what we have seen in (10). However, the role of maximality is more obvious. Consider the steps of syllabifying an underlying form like /katab + t + l + ha/ → [ka.tab.ta̲l.ha] 'I wrote to her':

(11) i



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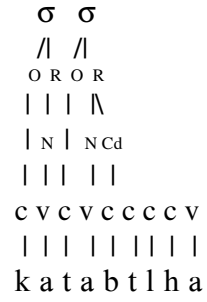

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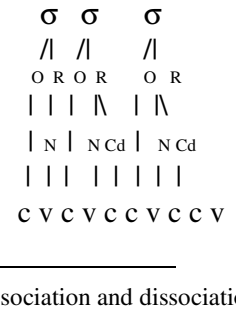
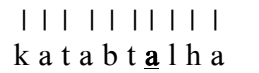
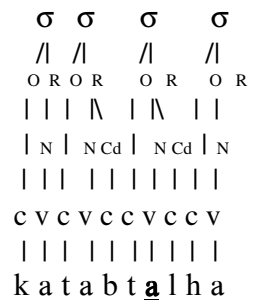


[7] I am assuming association and dissociation, not look-ahead (cf. § four below).



iv



The crucial characteristic of forms with quadri-consonantal intervocalic clusters is the fact that there are two medial consonants trapped between two other potentially syllabifiable consonants: one as the coda of the pre-cluster syllable and the other as an onset of the post-cluster syllable. This would render the two medial consonants unsyllabifiable, at least, by the syllabic template. Consequently, Prosodic Licensing motivates epenthesis. On the other hand, Maximality indirectly minimises the number of inserted vowels. To maximise syllable template matching, the /t/ and /l/ are assigned to the onset and the coda of the newly created syllable, respectively.

Thus, it is obvious that the two processes, viz. syllabification and epenthesis, are fused together under this theoretical framework. They are mutually affecting each other and are equally subject to both universal and language-specific principles and constraints. The parameter on directionality (L-to-R in UHA) determines the site of epenthesis, especially in tri-consonantal intervocalic clusters. The principle of Maximality, on the other hand, creates a heavy CVC syllable, in quadri-consonantal clusters, rather than two light CV syllables.

To a large extent, this is a constraint-based account of the discussed instances of epenthesis motivated by suffixation. Its essence is inherited in the OT's analysis presented in the previous chapter. In particular, we saw how a set of constraints decomposed the effect of the CVX syllable template, which is basically shorthand for a set of syllabification rules applying simultaneously. Also, it is obvious how the constraints *STRAY and SYL-MIN achieve what the principles of Prosodic Licensing and Maximality maintain in the present approach. In addition, the site of the epenthetic vowel is determined by calling on the alignment constraint Syll-ALIGN (R). That constraint connotes the left-to-right directionality of template-matching. Another thing is the Universal Core Syllable Condition (see (17) chapter two), that dictates the tautosyllabicity of CV sequences. In an OT account, this principle is enforced by the constraint ONS.

So, if both have identical assumptions, as far as this particular process of epenthesis is concerned, neither of the two theoretical frameworks may claim any superiority over the other.[8] Therefore, we ideally must expect the same with vowel shortening. However, we will see that we do need more specific rules to override the general process of syllabification and stipulate deletion rather than epenthesis.

The process of Internal Vowel Shortening would have to be enforced by a specific rule. This is because the derivational syllabification model I am adopting may not predict the segments to be deleted. This contradicts what we have experienced

[8] There remains one important detail, however. In the derivation account sketched above, why epenthesise at all, where we can simply delete the stray consonant? Does this mean that this derivational template-matching approach needs yet another constraint against consonant deletion, analogous to OT's MAX-C? Or does it need a rule dictating epenthesis and specifying its site?

above. Without employing any rule, the process of template-matching could pinpoint the site of epenthesis. Therefore, the remainder of this section investigates the factors influencing the language's selection of either process.

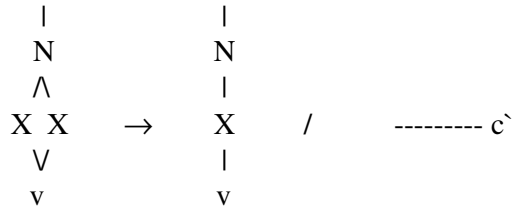
Forms (8 f-h) above are indicative of two characteristics of internal vowel shortening. Firstly, it is a well-formedness condition on syllabification only performed when needed, i.e. when we have a stray consonant (cf. (8 e) where it is not needed). Also, as we saw in chapter three above, it is only applicable to forms containing either subject suffixes or prepositional clitics (cf. (8 b and c) where object pronouns are being suffixed). This array of facts has inspired Abu-Mansour (1992) to suggest an analysis that recognises distinct morphological levels. According to her, suffixes in Makkan (see map in chapter one) occupy three different levels:

(12) subject suffixes in level I,
prepositional clitics in level II,
and object suffixes in level III

(Abu-Mansour (1992): 57).

In a nutshell, Abu-Mansour is suggesting that a well-formedness condition on syllable structure dictates shortening long vowels, in non-final closed syllables. However, it may not be enforced beyond level two morphology. She thinks that this is the best explanation of the restrictness of vowel shortening to hollow verbs and interrogative pronouns, the only forms to which level I and II affixes may attach. In a derivational framework, I think that such a well-formedness condition may not take effect unless translated into a rule as follows:

(13) σ σ



(where "c`" is not prosodically licensed)[9]

Now, let us test the appropriateness of this claim of morphological levels where (13) is enforced only in the first two levels. I will apply this to the underlying forms /gaal + l + i/ → [galli] 'he told me' in (a) and /gaal + t/ → [gult] 'I said' in (b) in (14) below:[10]

(14) a.i 

b.i 

Syllabification

a.ii N/A

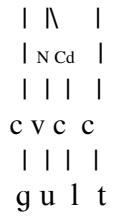
b.ii 

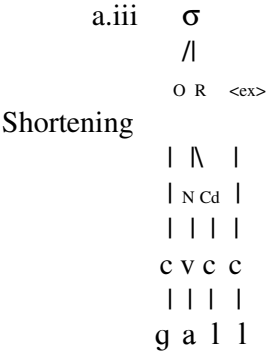
Level I Subject Agreement Suffixation

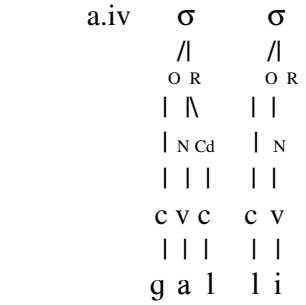
Internal Vowel Shortening

[9] I am clearly proposing that the two x-slots of the input are linked to a single vowel on the melodic-tier making the rule only applicable to underlying long vowels but not to underlying diphthongs that surface as /ee/ or /oo/. This explains why such a rule is not affecting forms like [ħab.beet] 'I loved'. I think this overrides Abu-Mansour's own account of this irregularity where she claims that an underlying diphthong is a VC sequence (cf. Jarrah (1993) for a proposal analogous to mine).

[10] Following Itô (1986), I am assuming that extraprosodicity (<ex>) can act as a licenser of extrasyllabic peripheral segments. In section four below, I shall spell out the argument concerning this issue.



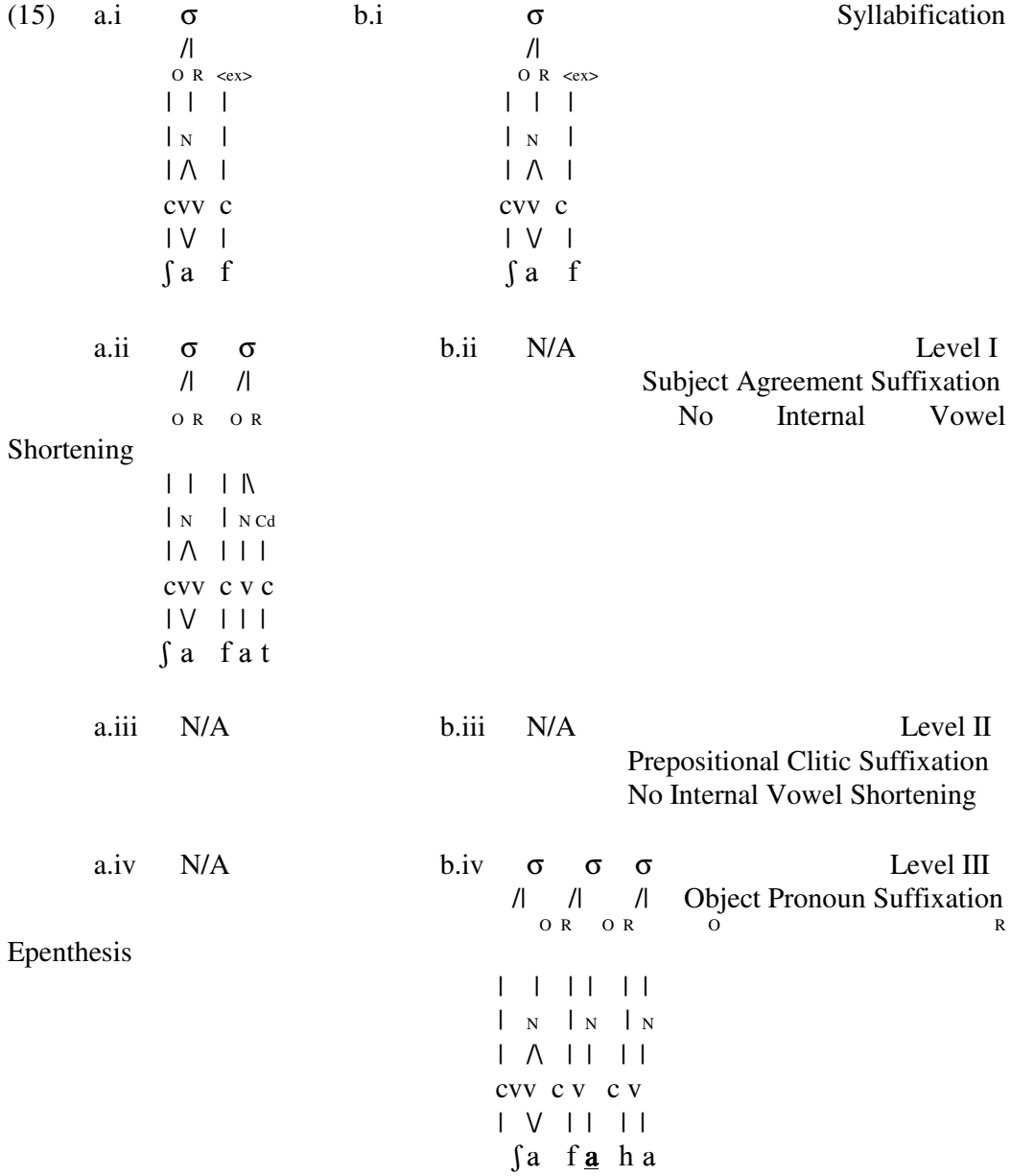
a.iii  b.iii N/A Level II
Prepositional Clitic Suffixation
Internal Vowel Shortening

a.iv  b.iv N/A Level III
Object Pronoun Suffixation

In the first step, both verbs have the same syllabification, as they have identical underlying perfective forms. In the second step, i.e. level one morphology, (14 a) is not affected as nothing is attached to it yet. (14 b), on the other hand, is an environment for internal vowel shortening. Here, we have an unprosodifiable consonant /l/, and we are in a morphological level where this shortening process is usually enforced. Similarly, the internal vowel in (14 a) shortens, but the shortening rule is applied on level two. Finally, we move to level three, where object suffixes are added.

Let us compare this with two other forms where shortening does not affect the internal vowel. I will consider /ʃaaf + at/ → [ʃaafat] ‘she saw’ which obviously involves nominative suffixation that does not create any stray consonant. Also, I will analyse a form like /ʃaaf + ha/ → [ʃaafaha] ‘he saw her’ where an accusative pronoun is being suffixed:

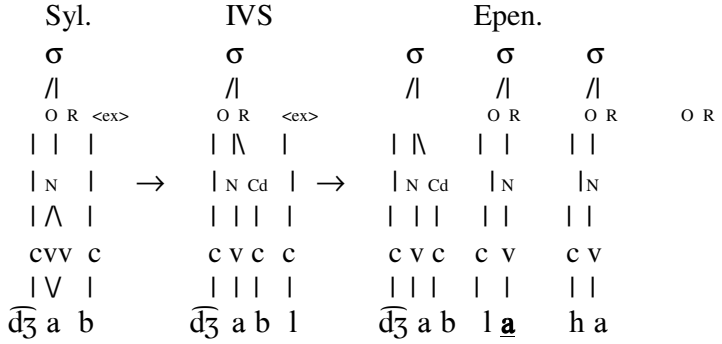
(15)



In (15a) internal vowel shortening is not performed because there are no unprosodified segments. Consequently, no syllabification remedy is needed. In (15b), an epenthetic vowel licenses the stray consonant that results from suffixation on level three, where internal vowel shortening is no longer enforced.

In some forms, as we saw in chapter three, we need both internal vowel shortening and epenthesis. Consider a form like /d͡ʒaab + l + ha/ → [d͡ʒabl**a**ha] 'he brought for her' where a prepositional dative is followed by a consonant-initial object pronoun:

(16)



This demonstrates that only by identifying distinct levels of morphology, where different processes may be enforced, may one account for the exceptional case of Internal Vowel Shortening.

Apparently, any attempt at analysing this idiosyncratic process demands some degree of stipulation. The fact that the language treats nominative and dative suffixes differently requires any theoretical framework to assume a certain analytical device to override the process that would otherwise yield the default case. OT assumes a domain specific constraint, $DEP^{\{C1C2\}}$, ranking it higher than the faithfulness pair to

enforce deletion rather than epenthesis in that domain. Similarly, DT employs a rule and only enforces it in that particular domain. However, OT is less stipulative, as vowel shortening is indirectly motivated. Constraint interaction renders both stray consonant deletion and vowel epenthesis, that violate MAX-C and DEP$^{\{C1C2\}}$ respectively, less harmonious than vowel shortening, which violates the relatively low MAX-μ. On the other hand, a rule like (12) above directly forces deletion by demanding shortening a long vowel before a stray consonant. Obviously, such a rule will not be considered in other derivations unless its environment is met. Conversely, the proposed OT hierarchy is supposed to be operative in any evaluation.

In conclusion, a comprehensive view of the whole process of medial consonant licensing indicates that OT is a more adequate framework than DT. In what follows, I will pursue the same line of investigation with different syllabification-related processes. In particular, we will see what arguments a derivational framework can provide to account for other instances of epenthesis.

4.3. Postlexical Licensing:

Postlexically, epenthesis is motivated by the peripheral consonants, that may no longer be licensed by extraprosodicity in the postlexical component. My main concern, however, will be to evaluate any proposed derivational account against the OT analyses presented in chapter three above.

The other type of epenthesis manifested in UHA is designated as being postlexical. The evidence bearing on this claim is twofold. Empirically, whatever the

shape or position of the syllable created by this type of epenthesis, it never bears stress. This does indicate that epenthesis of this sort applies postlexically, as rules of stress assignment belong to the lexical component and precede any postlexical rule (Kiparsky 1982, 1985). Furthermore, there is theory-internal evidence. This type of epenthesis is redundant throughout the lexical derivation. This is a consequence of our assumption that postlexical stray consonants are lexically licensed by Extraprosodicity, that ceases to operate postlexically (cf. section four below).

I will begin with final CVCC epenthesis. This type of epenthesis is activated by SSP violation, that may only be attested between two final consonants in UHA. Consider the following two groups of examples:

(17)	i	a. /d͡ʒism/	→	[d͡ʒi.sɪ̲m]	‘body’
		b. /ħukm/	→	[ħu.kʊ̲m]	‘law sentence or ruling’
	ii	a. /ʔuχt/	→	[ʔuχt]	‘sister’
		b. /sumk/	→	[sumk]	‘thickness’

The two final consonants in (17 i) exhibit a rise in sonority. However, sonority falls or stays level between those consonants in (17 ii). This will provoke SSP to block Chomsky-adjoining the final consonant in the former group in order to preserve the outwardly sloping sonority profile within a given syllable. Consequently, an epenthetic vowel is inserted to license a final unsyllabifiable consonant.

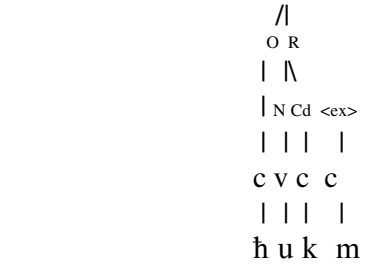
(18) Postlexical SSP Driven Vowel Epenthesis Rule:

N
|

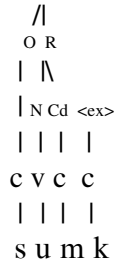
∅ → V / C_1 --------- $C`_2$ #
(where $C`_2$ is not prosodically licensed)

It must be clearly indicated that the rule which Chomsky-adjoins a final extrasyllabic consonant to the syllable node is ordered before this vowel epenthesis rule. This will bleed epenthesis unless Chomsky-adjunction is blocked by the SSP. In other words, if Chomsky-adjunction applies, the environment of postlexical epenthesis is reconfigured, hence its inapplicability. In the following derivation, we will see how this rule and the Chomsky-adjunction (see section four for more details) apply to different underlying forms prosodically licensing final consonants of final CVCC superheavy syllables. What I should stress, though, is that we only need these licensing mechanisms postlexically. This is because these stray consonants are marked as extraprosodic, and consequently they are immune to Stray Erasure during the lexical derivation. This is clarified below:

(19) a. i



b. i



Lexical Licensing

σ Postlexical Licensing

ii	N/A	ii	σ \ /| \ O R \ | /\ \ | N Cd \ | | | | c v c c | | | | s u m k	Chomsky-adjunction
iii	σ /| O R | /\ | N Cd | | | c v c v c | | | | | ħ u k u m	iii	N/A	Postlexical SSP Driven Vowel Epenthesis
iv	σ σ /| /| O R O R | | | /\ | N | N Cd | | | | | c v c v c | | | | | ħ u k u m	iii	N/A	Resyllabification

In the first step, the string of segments in both examples are licensed by template-matching and extraprosodicity. The first CVC sequences are assigned to heavy syllables, and final consonants are marked extrasyllabic. This is because Structure Preservation via template maximisation prohibits those from being assigned to the preceding syllable. Postlexically, nevertheless, where extrasyllabic consonants have to be licensed otherwise, Chomsky-adjunction properly syllabifies the final consonant in (19 b) but is blocked by the universal SSP from syllabifying /m/ in (19 a). Therefore, we had to resort to the other postlexical licensing mechanism, i.e.

epenthesis, which will not affect (19 b), as the environment of (18) is not met. Finally, the coda of the first syllable is resyllabified as an onset of the following newly created syllable to satisfy the universal constraint on CV tautosyllabicity.[11]

Now I turn to the other type of postlexical epenthesis, i.e. initial vowel and glottal-stop insertion. As we saw in chapter three above, this process is attested in the outputs of underlying forms containing an initial sequence of two consonants. These sequences occur in the underlying stems of Forms VII, VIII, X, etc. and their derivatives (McCarthy 1979a, 1981).

(20) Binyan Perfective Active

a. VII	/nkatab/	→	[ʔin.ká.tab]	'subscribe'
b. VIII	/ktatab/	→	[ʔik.tá.tab]	'write be registered'
c. X	/staktab/	→	[ʔis.ták.tab]	'write, make write'

NB (The epenthetic vowel is never stressed as it is inserted postlexically.)

For reasons already predicted, the initial consonant will be licensed by extraprosodicity in the lexical component. Postlexically, however, an epenthetic vowel and a glottal-stop are inserted, to license that consonant as the coda of the initial syllable. This is performed by the following two postlexical rules:

(21) a. Postlexical Initial Vowel Epenthesis:

$$\varnothing \rightarrow \begin{array}{c}\sigma\\|\\N\\|\end{array} /i/ \quad \# \text{ --------- } CC$$

b. Postlexical Initial Glottal-stop Epenthesis:

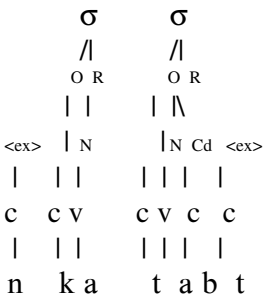
σ

[11] cf. Roca 1994 for some languages that do not adhere to such a constraint.

$$\varnothing \quad \rightarrow \quad \begin{matrix} / \\ O \\ | \\ /ʔ/ \end{matrix} \quad \# \text{ --------- } V$$

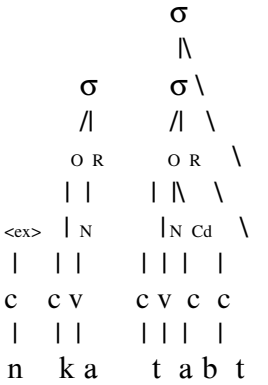
Thus, postlexically we apply (21a) that will insert a vowel to the left of the initial cluster feeding (21b), which provides the newly created syllable with a consonantal onset. In the following derivation, I will clarify these operations summarising postlexical licensing.

(22) /nkatab + t/ → [ʔinkatabt] 'I was written'

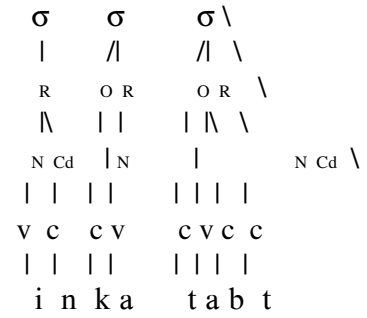


Lexical Licensing

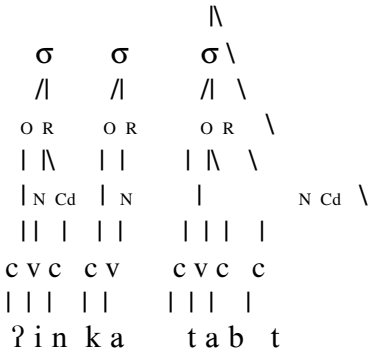
Postlexical Licensing
Chomsky-adjunction



Postlexical Initial Vowel Epenthesis



σ Postlexical Initial Glottal-stop Epenthesis



Now, I may summarise the process of Prosodic Licensing in UHA in the following step-by-step algorithm.[12]

(23) Prosodic Licensing Mechanisms in UHA:

I	a. Syllabification	⎫	Lexical	⎫
	b. Extraprosodicity	⎪	licensing	⎪
	c. Epenthesis & Deletion	⎭		⎪ Prosodic
				⎪ Licensing
II	a. Chomsky-adjunction	⎫	Postlexical	⎪
	b. Epenthesis	⎭	Licensing	⎭

What this algorithm is saying is that syllabification by template matching applies to the underlying string of unsyllabified segments. The output of this application may be

a fully or partially syllabified string. Unless all segments of the input are fully syllabified, hence licensed, we will have to activate the second and/or the third lexical licensing mechanisms. Otherwise, the stray segment(s) will be subject to Stray Erasure. Extraprosodicity marks peripheral unsyllabified consonants extrasyllabic. On the other hand, epenthesis and vowel shortening will provide syllable positions to license medial stray consonants. Postlexically, however, both Chomsky-adjunction and epenthesis will substitute extraprosodicity and license underlyingly peripheral consonants. Obviously, all these mechanisms are achieving Prosodic Licensing, a basic principle of the phonological theory.

From what we have experienced in this subsection of postlexical epenthesis, we can say that any OT account of these matters will be more plausible. The DT analysis above had to rely on extrinsically ordered stipulative rules. Why are we proposing these particular rules? Why not insert a vowel between the two underlying initial consonants? Or, why not Chomsky-adjoin an initial extraprosodic consonant directly to the syllable node, as we are adopting that finally to account for the final consonant in superheavies? Also, what blocks Chomsky-adjunction postlexically? Is it a constraint maintaining the SSP? Do we need both rules and constraints in DT? Apparently, we may not provide a plausible answer to any of these questions within the current theoretical framework. What is certain is that such questions are indicative of some kind of inadequacy of any DT's account of these processes. On the other hand, independently motivated universal constraints like SPP and ALIGN-RIGHT rendered most harmonious a candidate with an inserted vowel between the two

[12] To be sure, I am not proposing to impose any kind of control over the independently motivated process of template matching, the essence of Itô's theory. What I am suggesting, though, is that the

members of the final SSP violating cluster. Also, the constraints *COMPLEX, O-CONTIG, and ONS prompted initial vowel and glottal-stop epenthesis. In general, OT, as we saw in the previous chapter, provided more elegant analyses for these issues. In particular, it provides an answer as to why rules apply, and how they interact.

So far, the discussion in this chapter moves towards favouring OT as a more adequate analytical framework for syllabification-related processes in UHA. As the following section demonstrates, this is also true for the basic process of syllabification. Neither derivational account given below is simpler nor more plausible than what we have experienced in chapter three with OT.

4.4. Basic Derivational Syllabification and UHA:

The issue in this section is to evaluate the two derivational approaches to syllabification, namely rule-based and template-based, against the OT alternative provided in the previous chapter.

As I mentioned in chapter two, I will be mainly concerned with two proposals, each represents a derivational syllabification approach: rule-based and template-based, Steriade (1982, 1984) and Itô (1986, 1989) respectively. I will apply them to UHA to demonstrate their advantages and disadvantages, as far as the syllabification of this language is concerned.

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various licensing mechanisms should apply, at least in UHA, in a set order.

4.4.1. Rule-based Syllabification and UHA:

The particular case of UHA may require some modification and parameterisation of some of the core syllable rules presented in chapter two above. Also, an assumption has to be made regarding the syllabicity of final consonants of superficial superheavy syllables.

As presented in chapter two above, the existence of the Cv-rule, its early application and left-to-right directionality are inevitable in all languages. UHA must not be an exception. So, if we take a word like /kataba/ 'he wrote', the iteration of the Cv-rule will syllabify it as follows:

```
(24)  k a t a b a   >   k a t a b a   >   k a t a b a   >   k a t a b a
      | || | | |        | || | | |        | || | | |        | || | | |
      c v cv c v        c v c v c v       c v c v c v       c v c v c v
                        | |               | || |            | || | | |
                        O R               O R O R           O R O R O R
                         \|                \| \|             \|\| \|
                         σ                 σ  σ              σ  σ  σ
```

In this particular form, the Cv-rule exhausts the syllabification process due to the lack of intervocalic consonant clusters. However, forms like /maktab/ 'an office' will need other core syllable rules to account for the syllabification of especially the /k/ and /b/. These two segments may be syllabified by either an Onset-rule or a Coda-rule. This leads to the question of whether both or either of these rules exists in the syllabification algorithm of the language.

When we talked about syllable types in UHA, we saw that complex onsets are never licensed in the language, nor are onsetless syllables. In Steriade's framework, this is interpreted by totally suppressing the Onset-rule. Doing so would guarantee that only simplex onsets, the ones created by the Cv-rule, are syllabified. Codas, on the other hand, are optional, though never complex (especially word-internally). Hence, we may incorporate the coda rule in our syllabification process to account for the unsyllabified segments in the output of the Cv-rule as follows:

(25)

Cv-rule:	m a k t a b	>	m a k t a b	>	m a k t a b
output	| | | | | |		| | | | | |		| | | | | |
	c v c c v c		c v c c v c		c v c c v c
	| | | |		| |/ | |		| |/ | |/
	OR OR		OR OR		OR OR
	\ | \ |		\ | \ |		\ | \ |
	σ σ		σ σ		σ σ

Having established the lack of the Onset-rule and the need for the Coda-rule, we have demonstrated two language-specific properties: the existence and the order of application holding between the two rules, with the latter property being redundant. Also the fact that the language does not allow complex codas sets the mode of application of the Coda-rule to be non-iterative on its own output creating only bounded constituents. Therefore, we can say that the basic syllabification algorithm for UHA, within Steriade's framework, is as follows:

(26)
a. Cv-rule
b. Coda-rule (bounded application)

In our OT analysis, the effect of these two rules in this particular order is attributed to a set of independently motivated constraints. Ranking NUC and ONS undominated

achieves a minimum CV syllabic parsing. On the other hand, ranking SYL-MIN relatively low, but crucially higher than -CODA, enforces parsing a coda whenever possible. Also, the condition on the Coda-rule application is maintained by the undominated SYL-MAX, that would not sanction a complex coda. Again, I must stress that these constraints are not included in the hierarchy only to serve the purpose of rules in (26). They contribute to and participate in the evaluation of any input.

More serious, however, is the problem of long vowels in CVV and CVVC sequences. How will the algorithm in (26) syllabify the second timing slot of a long vowel? We may claim that the Cv-rule achieves such a syllabification. Nevertheless, this superficial account renders Steriade's fundamental proposal trivial. The universal status of the Cv-rule can be at stake if it is allowed to create any syllable other than the cross-linguistically unmarked CV. Also, I cannot see how we can justify the assumption in Steriade (1982) whereby Arabic long vowels are treated as VC sequences, hence deriving them using the Coda-rule.

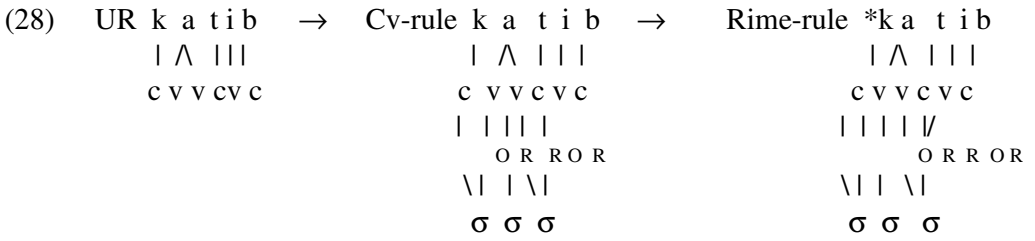
In order to offer a more satisfactory analysis, I will postulate modifying the Coda-rule making it applicable to both consonants and vowels. Consequently, I will rename it the Rime-rule, which can be formalised as follows:[13]

(27) VX → VX
|/
R
(X = consonant or another timing slot rendering the vowel long)

[13] As it is a modification of the Coda-rule, the Rime-rule will also be subject to the boundedness parametric constraints.

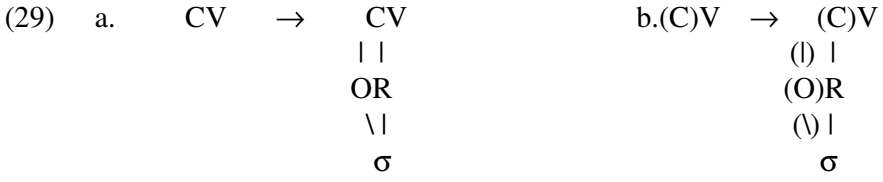
However, this will not guarantee the tautosyllabicity of long vowels. The syllabification of /kaatib/ below clarifies this point.

(28)



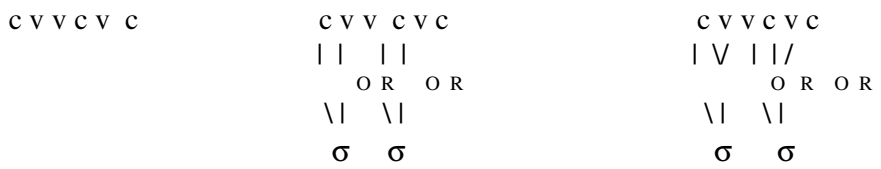
Obviously, the Cv-rule overapplies and assigns the second timing slot of the long vowel to a syllable node. To avoid this undesirable derivation, we have to demonstrate that the position is actually occupied by a consonant and consequently not subject to the Cv-rule. Within the current framework, such an objective may not be achieved. What I will test out as a proposal is an independent parameter that is set language-specifically to deal with such derivationally unattested outputs. I will parameterise the Cv-rule as follows:

(29)



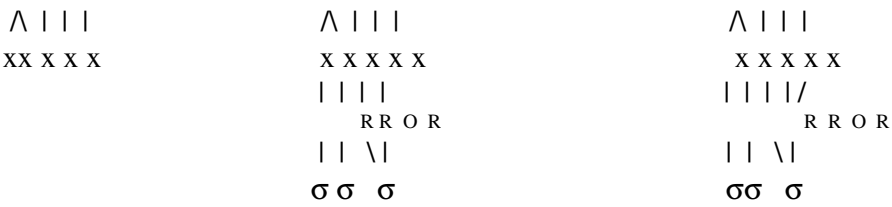
What (29) is saying is that the Cv-rule may be set to incorporate an onset into its output either obligatorily (29a) or optionally (29b). Languages that do not license onsetless syllables choose the first option and languages that do select the latter. Thus, for the particular case of UHA, we will have to choose (29a). This will prevent the Cv-rule from creating onsetless syllables. Consider the following derivation:

(30) UR k a t i b → Cv-rule k a t i b → Rime-rule k a t i b



We can say, for the particular case of UHA, that this account is sufficient. However, we may not claim that the parameterisation solution is cross-linguistically apt. This is not only because it confines the universality status of the Cv-rule, but also as it renders unsatisfactory results with other languages. Take English, for example, a language where onsets are optional. A rule like (29b) will not derive a true syllabification of a word like ‘even’ /i:vən/.

(31) UR i v ə n → Cv-rule i v ə n → Rime-rule * i v ə n



Thus, the fact that (29) did help in achieving the true syllabification for UHA is purely accidental. Therefore, the cross-linguistic applicational validity of the suggested parameterisation is questionable.

To solve this problem, I will suggest acknowledging the OCP to disfavour syllabifications like (28) or (31). However, I will have to assume that syllable nuclei must be individually represented on the melodic tier. This is justifiable on grounds of stress assignment, for example. Therefore, in those derivations, two identical

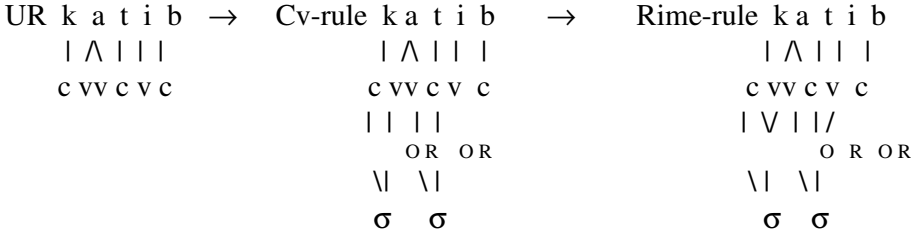
segments would have to appear next to each other on the melodic tier, hence violating this independently motivated principle.[14]

(32) Obligatory Contour Principle:
At the melodic tier, adjacent identical elements are prohibited.

(McCarthy 1986: 208)

Taking the left-to-right direction of application, the first x-slot of a long vowel will be syllabified as a nucleus by the Cv-rule, which is blocked from applying to the other x-slot, as this would render two identical segments adjacent to each other on the melodic tier. Consequently, the OCP will require /kaatib/ to syllabify as follows:

(33)



Yet, what about other languages with attested diphthongs? Having each member of the diphthong associated to a syllable node and consequently represented on the melodic tier will not violate the OCP.

What we have seen above are just some examples of the problems related with this type of syllabification, and in principle with any similar rule-based approach. In OT, we are able to avoid all these difficulties, since we are not forcing syllabification. In other words, we are not directly involved in creating syllables. We only propose a certain ranking of, ideally, universal constraints and shift the burden of the analysis to

[14] Again, we are calling on constraints in a supposedly rule-based account.

Gen and Eval. This will achieve true syllabification without the need to intervene every now and then postulating rules and rule orderings. For example, simple constraints like ONS and SYL-MIN will rule out false outputs like (28) or (31). On the other hand, in the syllabification approach sketched above, we have to force syllabification by the Cv-rule, and assume OCP as a constraint on its application.

By this, I conclude discussing Steriade (1982) and move to the other proposal of template-matching. This will help determine which, if either does, better accounts for UHA.

4.4.2. Template-matching and UHA:

The discussion in chapter three distinguished the syllable template in UHA. Throughout the forms presented there, the maximal syllable contains two elements in the rime: either a vowel and a consonant or a long vowel. Also, and as mentioned there, the onset position is obligatorily filled by a single consonant. This syllable template is the only wellformedness condition needed for UHA's syllabification. The other language-specific property, that has to be set for any language, is the direction of syllabic parsing or, to be more precise, templatic matching: left-to-right or right-to-left. To determine this for UHA, I will use an underlying form with an odd number of intervocalic consonants. The directionality the language prefers would predict the true site of epenthesis as is demonstrated below in (34):

(34) UR /katab-t-luh/ I wrote to/for him

(a) left-to-right

σ σ σ σ
/| /|\ /| /|\
k a t a b t ***a*** l u h

(b) right-to-left

σ σ σ σ
/| /| /|\ /|\
*k a t a b ***a*** t l u h

Therefore, the language-specific direction of template-matching in UHA is left-to-right.

So, unless *blocked* by a universal or language-specific wellformedness condition, the process of template matching will *maximally* associate skeletal elements to syllable positions of the CVX template going rightwards. As foreshadowed in footnote (5) of chapter two, there is a minor descriptive inadequacy connected with such a process. By claiming that the syllabic parsing is actually blocked by a violation of a wellformedness condition, Itô (1986) is surely adopting one of the following assumptions. She is either suggesting that her proposed algorithm is intelligent enough to anticipate what the next template-matching will configure, or she is assuming that we associate only to dissociate if a violation (of the CV-tautosyllabicity condition) is incurred. Consider the syllabification of a word like /d͡ʒarasi/ 'my bell':

(35) a. Looking Ahead

σ σ σ
/| /| /|
/ | / | / |
/ | / | / |
d͡ʒ a r a s i

b. Associating & Dissociating

σ σ σ
/|\ /|\ /|
/ | = / | = / |
/ | \ / | \ / |
d͡ʒ a r a s ɪ

The Looking Ahead can never be the true assumption, otherwise the theory will be rather hardwired. On the other hand, the Association and Dissociation is slightly

better. However, it is an example of what Pullum (1976) termed the Duke of York Gambit, as the /r/ and /s/ are linked to the coda position of a template only to be dissociated and reassociated to the onset position of the following template.[15] This operation is forced by the Universal Core Syllable Condition.

Recognising the moraic hypothesis, Hyman (1985), McCarthy and Prince (1986), and Hayes (1989), Itô (1989) achieves an advantage over her earlier non-moraic analysis where syllabification is interrupted in order to maintain the Universal Core Syllable Condition. Without linking that to such a shortcoming of her original proposal, she suggests a process of moraification that will eventually feed syllabification. In such a process, parsing melodies into moras is controlled by both the principle of Maximality and the parameter on Directionality. So, it is analogies to similar processes of prosodic construction like syllabification and footing.

For the Arabic dialects investigated in that article, Cairene and Iraqi, moras are composed as follows:

(36)
$$\mu \rightarrow \begin{matrix} cv \\ \{ v \} \\ c \end{matrix}$$

Out of this schema in (36), Itô assumes three different rules. They are illustrated in (37) below:

[15] Sensing this inadequacy, Jarrah (1993), who claimed to be adopting this theoretical framework, had to resort to an *algorithmic* syllabification involving two templates: one for the onset and another one for the rime. I think that doing so would trivialise Itô's main assumption of one-step syllabification and render the principle of Prosodic Licensing redundant.

(37) a.

```
                  μ
                  ∧
cv      →         c v
```

b.

```
                  μ
                  |
v       →         v
```

c.

```
                  μ
                  |
c       →         c
```

Itô claims that both the Sonority Principle and the assumption that a syllable peak is contained in its initial mora forbid the following syllabic configurations:

(38)

```
   *σ          *σ          *σ
   / \         / \         / \
  μ   μ       μ   μ       μ   μ
  ∧   ∧       |   ∧       |   ∧
 c v c v     c c v       v c v
```

Therefore, applying this moraification process to forms like (35) above will achieve the desired syllabification without the need for dissociation and reassociation. Consider the following representation of moraification and syllabification:

(39) Moraification:

```
   μ     μ     μ
   ∧     ∧     ∧
d͡ʒ a   r a   s i
```

Syllabification:

```
         σ     σ     σ
         |     |     |
   μ     μ     μ     μ
   ∧     ∧     ∧     ∧
d͡ʒ a   r a   s i
```

First, I applied the rules of moraification in (37) to the melodic tier. After that, syllabification is performed maximally matching two moras (where possible) into a

syllable. The maximisation of syllabic mora content is denied if the Sonority Principle is at stake. This principle is inevitably violated if two moras both of which dominate a CV sequence are parsed into one syllable. Hence, all the syllables in (39) are monomoraic.

Therefore, it is clear that Itô's (1989) model suits basic syllabification in UHA better than Steriade (1982). In addition, the major advantage of recognising the existence of Prosodic Licensing motivated me to adopt this model of syllabification in the previous sections. However, Itô (1989) does not argue for a cross-linguistic applicability of this moraification/syllabification process. Even if that were the case, it is obvious that this process lacks economy, especially if compared to syllabification in OT. Here, we need moraification to feed syllabification complicating the overall analysis by using both rules, as in (37), and constraints, as in (38).

In what follows, I will conclude by discussing the superheavy syllable. Again, I will evaluate the proposed derivational analyses against my OT analysis in chapter three.

4.4.3. Superheavy Syllables:

Another point related to syllabification is the markedness of superheavy syllables. How we can represent the internal structure of these syllables within a derivational framework is central to the discussion below. In particular, I want to determine how the final consonant of superheavies is affiliated. I will present two basic proposals discussed in the relevant literature accounting for the incorporation of

these final consonants. One is suggested by McCarthy (1979 a, b) and the essence of the other is found in Aoun (1979), Selkirk (1981) and more recently in McCarthy & Prince (1990). Finally, I will present my personal view demonstrating its consequences on other processes of epenthesis and deletion.

4.4.3.1. Chomsky-adjunction:

McCarthy (1979 a, b) recognised superheavies as a distinct type of syllables but limited their distribution (crucially in Classical Arabic) to the phonological phrase final position. He claimed that CVCC and CVVC syllables result from the prepausal elision of final short vowels as the following example demonstrates:

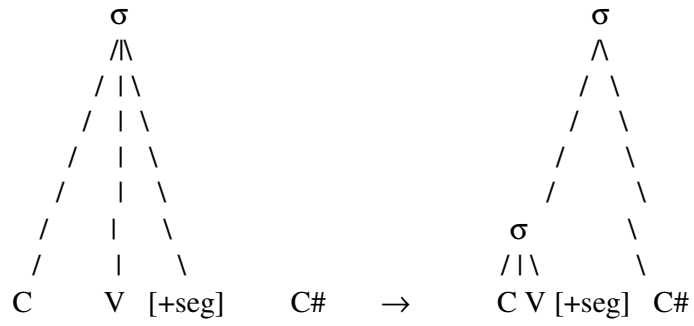
(40)	a.	[[kitaabu]#[ʔaħmad]#]Φ	'Ahmad's book'
	b.	[[haða]#[kitaab]#]Φ	'this is a book'

In (40a), the stem /kitaab/ is not phrase final, where the final vowel case marker is not lost and consequently the superheavy syllable is not realised at all. In (40b) however, /kitaab/ is phrase-final, an environment where final short vowel case markers get deleted, hence a superheavy syllable is created.

Nevertheless, McCarthy noticed that Modern Arabic dialects such as Cairene and Damascene have superheavy syllables as well, as of course has UHA. Unlike Classical Arabic, these superheavies are not only limited to the phrase-final position: they can also occur word-finally. Such a variation may be accounted for by changing the environment of any rule deriving these syllables.

To account for these superheavy syllables' internal structure incorporating the final consonant, McCarthy suggested adding a Chomsky-adjunction rule to parse these consonants into a preceding heavy syllable that belongs to the basic syllabic repertoire. McCarthy formalised this rule as follows:

(41)



(McCarthy 1979b: 453)

The main point that this rule implies is the fact that McCarthy treats these syllables as derived rather than as part of the basic syllabic repertoire of Arabic, in general.

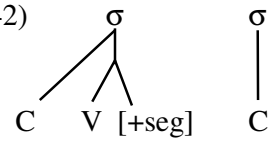
4.4.3.2. Degenerate Syllables:

The degenerate syllable is the other proposal suggested in the literature to account for the final consonant of superheavies. This was suggested by people like Aoun (1979), Selkirk (1981), and more recently by McCarthy & Prince (1990). All of them argue that the final consonant of superheavy syllables is licensed as an onset of a *nucleusless*, *ghost*, *incomplete*, or *degenerate* word-final syllable. In particular, it will

be syllabified to a different syllable node following the one dominating the previous heavy syllable.

Aoun (1979), who first postulated such an analysis, suggested, for purposes of stress assignment, representing a superheavy syllable as a concatenation of a heavy plus a degenerate syllable, as clarified in (42):

(42)



(Aoun 1979, p. 140)

His main objective was to posit an analysis that only characterises two syllable types: light and heavy.

Selkirk (1981), capitalising on Aoun's postulation, argued for a theory that interprets epenthesis on grounds of syllabic degeneracy, i.e. unfilled syllabic positions are sites of epenthesis. She argues that the degenerate analysis applies to CVCC but not CVVC sequences, in Cairene Arabic. So, she had to include CVVC syllables in the basic repertoire of the language.

McCarthy & Prince (1990) however, came up with a slightly different but genuine analysis of syllabic degeneracy. Arguing for a moraic distinction between light and heavy syllables in Arabic, i.e. monomoraic and bimoraic respectively, McCarthy & Prince claimed that peripheral *extrametrical* constituents enrich the inventory of choices of moraic assignment. Their central proposal, in this respect,

interprets the initial consonant of an underlying initial cluster as a moraic Coda and the domain-final (most crucially stem-final) consonant as a nonmoraic onset. These peripheral extrametrical constituents are representatives of what they call *incomplete syllables*.

McCarthy & Prince integrated the initial consonant of initial consonant clusters into their proposed moraic model. They established their underlying existence by assigning them an extrametrical mora, that will presumably be linked to an extrametrical syllable. They argued for such an analysis by comparing the epenthesis sites motivated by these initial clusters to others motivated by different underlying strings. In all cases of Cairene Arabic, where epenthesis is required, the epenthetic vowel follows the unsyllabified consonant: /fataħt-lu/ → [fa.taħ.ti̱.lu] 'I opened for him'. However, it precedes it in initial consonant clusters, as clarified in (43):

(43) / nfataħ / >> [ʔin.fa.taħ] 'it *ms.* was opened'

(a) (σ) σ σ → σ σ σ

(μ) μ μ μ μ μ

n f a t a ħ ʔ i n f a t a ħ

(b) σ σ → σ σ σ

μ μ μ μ μ

n f a t a ħ n ɨ f a t a ħ

Underlyingly assigning an extrametrical mora to the initial /n-/ in (43 a) changed the regular site of epenthesis. This is motivated by a constraint on syllabic wellformedness proposed by McCarthy & Prince, namely the Contiguity Constraint, given in (44) below:

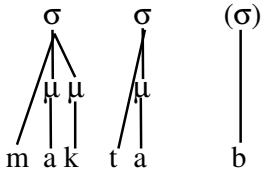
(44) Contiguity Constraint:
Syllabic well-formedness is enforced over contiguous strings of subsyllabic elements.

(McCarthy & Prince 1990: 15)

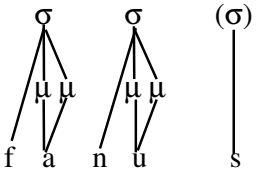
This constraint enforces characterising the initial consonant as moraic, and consequently as a coda rather than as an onset. In (43 b), on the other hand, where the initial consonant is not associated with a mora, the epenthetic vowel is inserted between the two consonants resulting in an ill-formed surface representation, violating the Contiguity Constraint. I think that the unmarked, though unattested, epenthesis in (43 b) confirms a general principle hinted at by Selkirk (1981) where " all else being equal, the number of dummy positions in the underlying syllabification is to be minimised" (Selkirk 1981, p. 215). This means that if nothing requires it, unfilled syllabic positions and consequently epenthesis is strictly economised.

The other part of McCarthy & Prince's proposal is concerned with the other edge of the syllabification domain. In an effort to syllabify a stem-final consonant, they proposed linking it to an extrametrical final syllable. The following representation spells out their suggestion:

(45) (a)

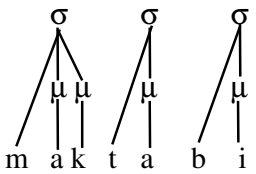


(b)

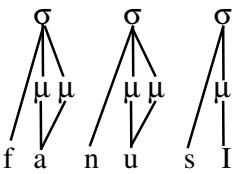


They made it very explicit that this consonant must not be analysed as non-moraic. Their evidence is drawn from the fact that such a consonant is always syllabified as an onset if followed by a vowel-initial affix, as demonstrated below:

(46) (a)



(b)



(gloss: 'my book' 'my lantern')

Therefore, their proposed analysis restricts the number of fully formed syllable types to only two: monomoraic CV and bimoraic CVC or CVV. In addition to these, there are two incomplete syllables "consisting solely of a moraic consonant (a Coda) or a nonmoraic consonant (an Onset)"[16] (McCarthy & Prince 1990: 15).

I am not adopting such an analysis of the superheavy syllable. I find the idea of projecting a non-moraic syllable finally and denying a mora form being syllabified initially far more *ad hoc* than the simple rule of Chomsky-adjunction. A further complication of this analysis is, again, the need for both rules and constraints, the contiguity constraint in particular. Below, I will present my own account for the superheavy syllables (adopting some kind of Chomsky-adjunction) and try to uniformise its application throughout the lexical component.[17]

[16] If McCarthy & Prince's claim concerning the lack of moraicity of final consonants is well established, how can we account for the moraicity of /t/ in the Iraqi /gilt-la/ → [gi.lit.la] 'I told him'? Is it underlyingly moraic contradicting the authors' claim or is it assigned a mora derivationally?

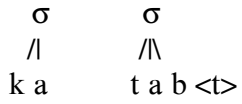
[17] In an attempt to dispense with the seemingly *ad hoc* or, to say the least, unsatisfactory analyses of the superheavy syllable, to wit, Chomsky-adjunction and syllabic degeneracy, Al-Ageli and Roca (ms.) suggest performing syllabification on the word rather than the stem level. Crucially, their assumption is only applicable to MSA, where inflectional case markers are maintained word-finally. Interpreting syllabification as such would have a stem-final consonant occupy the onset position of a light (or a Cvn) syllable, the vowel of which is the case marker. Doing so will eliminate superheavy syllables and render

4.4.3.3. Extraprosodicitiy and Chomsky-adjunction:

The derivational account I will adopt to analyse superheavy syllables assumes that both extraprosodicity and Chomsky-adjunction participate in licensing the final extrasyllabic consonant.

Firstly, as it may not be syllabically licensed by the CVX syllable template, that will already have been maximised, the final consonant of a superheavy syllable will be licensed by extraprosodicity, the other lexical licensing mechanism (Itô 1986). Marking the final consonant of superheavy syllables extraprosodic is yet another language-specific property. This consonant will remain to be licensed by extraprosodicity throughout the level of lexical component, where syllabification and stress assignment are performed. This will serve two purposes, though. It will make the syllable inventory uniform across the board. More importantly, however, it will achieve the ideal binary syllable weight distinctions of light vs. heavy throughout the form. As we shall see in subsequent chapters, this is quite essential when we start to analyse stress. Consider the syllabification of /katabt/ 'I wrote' below:

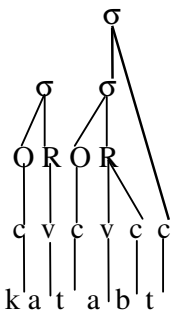
(47)



stem-final heavies light, hence achieving uniformity of syllable types throughout the word. Therefore, a stem like /maktab/ will syllabify on the word level as [mak.ta.bun], and /faanuus/ as [faa.nuu.sun]. On the postlexical level, after applying the rules of syllabification and stress assignment lexically, the final vowel (and consonant) will be deleted utterance-finally, having no effect whatsoever on syllabification or stress.

Postlexically however, the final consonant must be prosodically licensed by syllabification or prosodification (cf. Rubach and Booij (1990) and Rubach (1997), as extraprosodicity is no longer operative. This may be achieved by Chomsky-adjoining the consonant to the syllable node. Structure Preservation cannot disfavour such a conjunction, as it is not active postlexically, where Stray Erasure is (Itô 1986). This will have no effect on the syllabification or stress assignment as they have already been performed in the lexical level.

(48) Postlexical Conjunction:



This may look more plausible than the previous accounts, yet it is still quite stipulative. The OT analysis in chapter three achieves the same objective, i.e. licenses a stray consonant, by utilising a set of universal constraints. In particular, the relatively low ranking of EXHAUS facilitates prosodifying the extrasyllabic consonant by linking it to the PrWd. We did not enforce such an association directly, by a rule of Chomsky-adjunction, for example. All options were left open. Only constraint interaction determines the true output. Also, we saw how superordinately ranking universally motivated constraints like ALIGN-LEFT, SYL-CONTIG, and *COMPLEX controls this EXHAUS violation restricting it to only the final position.

4.5. Conclusion:

This chapter evaluates a derivational account of syllabification in UHA. By comparing that to chapter three, it demonstrates how OT is capable of providing more plausible analyses of the discussed processes. Although adopting a derivational framework makes it much simpler to account for the process of High Vowel deletion, it required a great degree of stipulation to account for other syllabification-related operations. Also, the issue constrained application of rules adds a further complication. In the previous chapter, we saw that constraints are capable of explaining the discussed processes. Here, however, we need both rules and constraints. Therefore, will that be the same with metrification? In other words, will OT maintain this analytical competence? In particular, will some of the assumptions of chapter three, especially the ones regarding the superheavy syllable, prove to be of real use when it comes to footing and stress assignment? The purpose of the next chapter is to investigate such matters.